Potential Impacts of Logging on Water, Fisheries and Wildlife Habitat in the Lussier River Watershed

Complaint Investigation 000243

FPB/IRC/63

March 2002

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The Investigation

In May 2000, the Concerned Residents of Sheep Creek complained to the Board that logging had damaged the Lussier River watershed. The complainant asserted that:

- continued logging has worsened erosion of private and public lands;
- not enough timbered wildlife habitat has been retained;
- the forest development plan (FDP) review and comment process was inadequate; and
- Ministry of Forests (MOF) staff provided misleading information about the status of harvested areas in the watershed.

The complaint concerns harvesting approved by MOF in 1998 in Coyote Creek (CP 133) and Nichol Creek (CP 142), both tributaries of the Lussier River. The Lussier River is near Skookumchuk in the Invermere Forest District. Crestbrook Forest Industries Ltd. (the licensee), now Tembec Industries Inc. (Tembec), had not completed the approved harvesting by May 2000. The licensee's intention to continue logging the approved cutblocks prompted the complaint.

Background

In the 1980s, the Lussier watershed was disturbed by a 13,000-hectare wildfire followed by timber-salvage activities. Additional timber harvesting occurred through the 1990s. Downstream, local residents were upset about the ongoing erosion of their lands, which they felt was caused by timber harvesting and forest fire disturbances to the watershed. The landowners expressed their concern to MOF in July 1999.

MOF, the residents and the licensee disagreed on the cause of erosion on the residents' lands. The residents objected to continued logging in the Lussier drainage. MOF told them that harvesting in the upper Lussier had been approved two years earlier and that MOF had no legal authority (under the *Forest Act*) to rescind issued cutting permits. On May 27, 2000, the residents complained to the Board.

After the complaint was submitted, the licensee offered to delay logging and to carry out a professional hydrologic review with the involvement of the complainant. The Board encourages co-operative resolution of complaint issues, so delayed its investigation by about two months to allow the participants to work toward their own resolution. The hydrologic review determined that the remaining harvest in CP 142 (0.7 hectares) would be a low risk to Nichol Creek but that continued harvesting of about 50 hectares in CP 133 would present a high risk to Coyote Creek. The licensee volunteered to discontinue logging the approved but unharvested cutblocks in both drainages. The complainant's concern about continued logging was resolved, but other complaint issues were not settled.

The Board decided to investigate:

- whether it was appropriate for the district manager to approve operational plans given the concerns about wildlife habitat and hydrology;
- the complainant's opportunity to participate in the review and comment process, and the overall fairness of the process; and
- the accuracy of information provided to the complainant during communication about operational plans.

Relevant Legislation

Forest Practices Code of British Columbia Act

Section 1 - Definitions

Section 10 – Forest development plans: content

Section 17 – General planning requirements

Section 19 – Forest development plans for major licence

Section 34 – Voluntary amendments of operational plans

Section 41 – Approval of operational plans

Operational Planning Regulation

At the time, sections 2 to 5, 15, 19, 21, 23, 24 and 32; currently:

Section 11 – Maximum cutblock size

Section 14 – Watershed assessment requirements

Section 18 – Information requirements for forest development plans

Sections 24 to 30 – Public review and comment requirements

Discussion

Harvesting in the Nichol Creek and Coyote Creek tributaries of the Lussier River was approved February 12, 1998, as amendment #17 to the licensee's 1997-2001 FDP. Silviculture prescriptions for cutblocks in CP 133 were approved in March 1998, and for CP 142 (except cutblock 5) in June 1998. The silviculture prescription for cutblock 142-5 was approved in November 1998, following completion of a terrain hazard field assessment.

Was it appropriate for the district manager to approve operational plans given the concerns about wildlife habitat and hydrology?

Compliance with Forest Practices Code requirements for wildlife habitat and hydrology

Under section 41 of the *Forest Practices Code of British Columbia Act* (the Act), a district manager may only approve an operational plan or amendment if it has been prepared and submitted in accordance with the *Forest Practices Code of British Columbia Act* and regulations (the Code). The Board confirmed that the licensee complied with Code content and submission requirements for wildlife habitat and hydrology for amendment #17 and related silviculture prescriptions. Also under section 41, the district manager must be satisfied a plan or amendment will adequately manage and conserve the forest resources in the area of the plan, including wildlife and water. The district manager told the Board that he was satisfied, based on a lengthy planning process and referral advice, that hydrologic and wildlife habitat values in the Lussier drainage were appropriately addressed. The Board accepts that, in making his decision to be satisfied, the district manager considered substantive information available to him. On that basis, the Board finds that the district manager complied with section 41 of the Act.

Was it appropriate for the district manager to be satisfied the plan would adequately manage and conserve wildlife and water resources?

A district manager uses discretion in deciding whether to be satisfied a plan will adequately manage and conserve forest resources such as wildlife and water. The standard the Board uses in evaluating discretionary decisions is not whether, in the Board's opinion, the decision was the best decision. Rather, the Board considers if the decision was consistent with sound forest practices, if it achieved the intent of the Code and if it was based on an adequate assessment of available information. The district manager told the Board that he uses that same standard when deciding whether to approve operational plans.

Wildlife Habitat

Before the Code, in 1993, the Invermere Forest District introduced total-resource plans, a landscape-level planning process intended to resolve resource management issues in advance of forest development planning. In 1993, the licensee proposed, in its Lussier River-Coyote Creek total-resource plan, to retain 27 percent of the operable forest in the plan area for about 50 years to provide for wildlife cover and movement. After implementation of the Code, MOF approved harvesting in the areas previously proposed for retention. That harvesting has caused the complainant's concern about adequate tree retention for wildlife habitat. The investigation considered how operational planning addressed wildlife habitat.

In April 1997, the district manager told the licensee that CP 142 of the proposed 1997-2001 FDP is not consistent with existing plans or direction and that additional harvest had previously been deferred in the upper Lussier until wildlife cover improved. In May 1997, the Ministry of Environment, Lands and Parks (now the Ministry of Water, Land and Air Protection) recommended to the licensee that forest development planning be consistent with the 1993 total-resource plan. However, the Code does not require operational plans to be consistent with pre-Code planning processes. The licensee responded to the Ministry of Water, Land and Air

Protection (MWLAP) that the FDP met Code requirements as well as *Biodiversity Guidebook* recommendations for old-forest retention. In other words, implementation of the Code established a lower standard for wildlife habitat protection than that established pre-Code by the Lussier River-Coyote Creek total-resource plan. The licensee stated it would update its 1993 total-resource plan to reflect the new Code requirements and recommendations for biodiversity. In June 1997, the district manager approved the 1997-2001 FDP, anticipating that inter-agency discussion during revision of the total-resource plan would address MWLAP's wildlife habitat concerns.

Updating of the total-resource plan involved the licensee, MOF and MWLAP and led to amendment #17 of the 1997-2001 FDP. In November 1997, the licensee provided MOF with an analysis that demonstrated amendment #17 met *Biodiversity Guidebook* recommendations for both old-growth retention and patch-size. Patch-size is the pattern of openings and mature forest on the landscape. For the ecological zone found in the upper Lussier, the *Biodiversity Guidebook* recommends a clustered harvest pattern using large, aggregated cutblocks to resemble the natural pattern of large fires and large unburned areas. This would provide habitat for a diversity of wildlife. Retention of wildlife tree patches within aggregated cutblocks, either of mature forest or as single trees, would mimic the remnants of forest typically left within natural burns. The licensee had earlier said it would plan for wildlife tree patches when it prepared its silviculture prescriptions.

The Board confirmed that, with one exception, CP 142 silviculture prescriptions met or exceeded the area for wildlife tree patches as suggested by the *Biodiversity Guidebook*. The CP 133 silviculture prescriptions did not identify any wildlife tree patch areas but did commit to retain trees of insignificant commercial value. The district manager did not consider identification of wildlife tree patches to be important in CP 133 because of the proximity to remaining mature forest. There is no Code requirement to locate wildlife tree patches within each cutblock.

In December 1997, MWLAP told the district manager that the licensee's proposal for amendment #17 had insufficient connectivity. Connectivity is the degree to which older-aged ecosystems link together. MWLAP also recommended that the district manager not approve any further large openings as past disturbance and harvesting had, in MWLAP's opinion, created sufficient large patch sizes in the Lussier landscape. MWLAP did not include a detailed explanation or analyses in support of its opinion about connectivity or patch-size.

In February 1998, MWLAP briefly reiterated its objection to MOF about large cutblocks. Regardless, the district manager approved the FDP amendment shortly after that. The district manager told the Board that MWLAP's objection was unsubstantiated because the licensee had met Code requirements as well as recommendations of the *Biodiversity Guidebook* concerning connectivity and patch-size.

The Board accepts that the licensee's assessment of old-forest retention and patch size resulting from harvesting proposed in amendment #17 is, at the landscape-unit level, consistent with recommendations of the *Biodiversity Guidebook*. In planning the amendment, the licensee had identified connectivity corridors for wildlife movement. In the Board's view, the connectivity

corridors are generally narrow, but their locations are consistent with the recommendations of the *Biodiversity Guidebook*. Elk use of the corridors and of the remaining mature forest was evident during a site visit by Board staff.

It is the Board's view that MWLAP's comments about wildlife habitat were vague relative to the biodiversity information presented by the licensee. MWLAP could have provided the district manager with more specific information about the need, if any, to go beyond minimum Code requirements and guidebook recommendations for connectivity and patch-size. MWLAP told the Board that, to manage workload, it relied on an inter-ministerial agreement that said MOF would advise MWLAP of intent to approve an operational plan counter to MWLAP's recommendation. That communication might then trigger additional relevant discussion. The district manager did not discuss the objection with MWLAP or seek a third-party opinion before approving the amendment.

In the Board's opinion, both agencies have a responsibility to communicate clearly and effectively.

MWLAP should have substantiated its wildlife habitat concerns with more detailed information about the resources at risk and potential impact of the proposal on those forest resources. According to the inter-ministerial agreement, which is not within the Board's jurisdiction to investigate, the district manager should have advised MWLAP of the intent to approve amendment #17 over MWLAP's objection. MWLAP may have expanded on its opinion or provided additional site-specific information of significance to the district manager's decision.

On the basis of the information available to and considered by the district manager, the Board accepts as appropriate the district manager's decision to be satisfied that amendment #17 would adequately manage and conserve wildlife. However, the Board's confidence in the district manager's decision would have been greater had the district manager assured that explicit communication and more rigorous analysis of MWLAP's objection had occurred prior to approval of FDP amendment #17.

Hydrology

The complainant believes that logging has exacerbated erosion. The Board did not investigate the issue of erosion, but considered how operational planning addressed hydrology.

In April 1997, in discussion with MOF and the licensee about the 1997-2001 FDP, a MWLAP designated environment official requested a watershed assessment of the Lussier River. A watershed assessment helps forest managers understand existing water-related problems and helps to predict the effect of proposed forest activities on a watershed. Prior to 1999, the watershed assessment procedure had two levels. Level 1 was a reconnaissance-office exercise using maps, airphotos and forest cover records to develop indices used to generate hazard ratings for peak flows, riparian, surface erosion and landslides. Level 2 was a detailed field exercise used to verify the Level 1 indices and to assess stream channel condition.

MWLAP requested a detailed watershed assessment in order to facilitate evaluation of risks to fish habitat. Outside of community watersheds, the *Operational Planning Regulation* requires that

watershed assessments be done only where the district manager has agreed with the designated environment official, or determines on his own, that a watershed assessment is necessary. The district manager, uncertain about the usefulness of the assessment procedure, advised the licensee to await further direction before doing any watershed assessment not specifically required by the Code.

A month later, during the review and comment period for the 1997-2001 FDP, both MWLAP and an environmental group recommended the licensee undertake watershed assessment of the Lussier on the basis of high fisheries value (a forest resource dependent on hydrologic condition). The licensee responded to MWLAP, the environmental group and the district manager that Code requirements and guidelines would adequately protect the fisheries resource. No one challenged the licensee's response. On June 13, 1997, the district manager approved the 1997-2001 FDP.

In August 1997, MWLAP formally recommended to the district manager that a watershed assessment of the Lussier drainage be done, citing concern for fisheries and providing detail about fish-habitat values, including that of bull trout. Government considers bull trout to be a species at risk. In 1997, the draft *Identified Wildlife Management Strategy* recommended watershed assessment of sub-basins that contained bull trout if harvesting was planned and if there were landslides, high road density, high stream density on unstable or erodable soils, or a significant number of stream crossings. Some of these criteria are obvious in parts of the Lussier drainage. MWLAP identified that proposed harvesting, coupled with present conditions, raised concerns about stability of the stream channel and its ability to maintain suitable fish habitats. Where assessment determines a watershed is sensitive to disturbance, the draft guidebook suggested that bull trout would be at risk and advised additional care in forest planning.

The district manager decided he would require the licensee to do a watershed assessment in 1998, after the expected release of a revised assessment procedure. To aid decision-making in the interim, MOF district staff had the MOF regional hydrologist assess the risk of harvesting as approved in the 1997-2001 FDP. The MOF hydrologist reported that:

- Harvesting less than one percent of the drainage area would not likely have an impact on the drainage.
- Current disturbance in the watershed would likely trigger a need for detailed field evaluation.
- The revised watershed and channel assessment procedure should be applied to priority sub-basins during 1998.
- Pending watershed assessment, the district manager should direct harvesting activity to cutblocks removed from major water courses to provide more than minimum Code riparian protection, and to those cutblocks that have existing road access.

The licensee was aware of the MOF hydrologist's recommendations and responded to them. In amendment #17, the licensee proposed:

- to eliminate nine cutblocks, but convert previously approved selection (partial-cut) harvesting to clearcut. Board staff estimate that this resulted in a reduction of equivalent clearcut area by 40 hectares in Nichol Creek and by 2 hectares in Coyote Creek;
- to leave a reserve wider than the minimum Code requirement on a cutblock adjacent to Nichol Creek. For a cutblock adjacent to the Lussier River, the licensee left a reserve varying in width from 30 metres to 50 metres, the minimum Code reserve width for both streams being 30 metres; and
- no change in the amount of new road construction in either CP 133 or CP 142. The licensee told the district manager that all new roads in CP 142 would be temporary and deactivated on completion of harvesting, and that resource agencies had no hydrologic concern with CP 133.

In November 1997, the licensee hired a water-resource engineer to assess the hydrologic impact of amendment #17. The engineer concluded that incremental impact on the Lussier River would not be noticeable relative to the previous impact of fire and logging. In other words, amendment #17 would marginally disturb an already disturbed area. The engineer also noted that:

- The licensee's proposed harvesting in the Lussier, which included harvesting in addition to amendment #17, would increase disturbed area in the drainage by about four percent.
- Coyote Creek would not be further affected by the CP 133 cutblocks.
- Nichol Creek would experience "accelerated bank erosion for up to 5 years" under normal hydrologic conditions.
- Rapid channel change in Nichol Creek and increased sediment transfer to the Lussier River was possible if a one-in-ten year flood occurred.
- Estimates of impact are subject to some uncertainty because, with marginal disturbance in a highly-disturbed area, threshold values for catastrophic change are difficult to predict.
- More detailed assessment should be done to more accurately assess cumulative impacts of additional harvest permits.

In December 1997, MWLAP wrote MOF to express confusion over the water-resource engineer's findings. A MWLAP hydrologist said the licensee's assessment did not meet BC government standards for channel assessment. The MWLAP hydrologist expressed concern about the potential for stream-flow change, sediment transfer from new roads to the Lussier River, and the state of hydrologic recovery of disturbed areas. The hydrologist stated that mapped hydrologic recovery information will be needed to make long-term projections about future opportunities for forest development in the area. The hydrologist recommended the

licensee perform a reconnaissance-level channel assessment, expected to be part of the revised Level 1 watershed assessment procedure.

The licensee submitted amendment #17 for approval on January 6, 1998. On February 12, 1998, the district manager approved the amendment. The district manager told the Board that "precautions implemented by the licensee and information provided by [the MOF hydrologist and licensee water resource engineer] indicate that the proposed harvest and limited access development imposed minimal risk to the water and fishery values in the area."

A month later, the district manager and designated environment official directed the licensee to complete watershed assessments for both Upper Lussier/Nichol Creek and Coyote Creek. However, before any watershed assessment information was compiled, the district manager approved silviculture prescriptions for CP 133 and CP 142 (except cutblock 142- 5) and issued final cutting authority to the licensee. The district manager explained to the Board that it was his intent that watershed assessments guide future harvesting, not harvesting proposed in amendment #17.

In October 1998, the licensee submitted a watershed assessment report to the district manager. Hydrologic hazard ratings confirmed that (Level 2) channel assessments should be done for Coyote and Nichol Creeks. The licensee, noting that harvesting had already been approved in both Coyote and Nichol Creeks, sought deferral of that fieldwork. No additional harvesting has since been proposed and the watershed assessments have yet to be fully completed.

In summary, MWLAP had identified a concern about risk to fisheries values, and intended that risk to be evaluated through watershed assessment. A regional MOF hydrologist subsequently provided the district manager with recommendations to manage hydrologic risk of harvesting in the Lussier drainage and to apply the revised watershed assessment procedure in future. The licensee sought to incorporate the MOF hydrologist's recommendations in amendment #17. The licensee's water resource engineer concluded that hydrologic impact of amendment #17 was "not expected to be noticeable." Though MWLAP staff questioned the findings of the water resource engineer, MWLAP did not explicitly object to amendment #17 because of hydrologic risk or risk to fisheries. The district manager told the Board that he considered the professional opinions of each hydrologist as well as the licensee's planning response and concluded that hydrologic risk of amendment #17 was acceptable.

The Board accepts that MWLAP's requests for watershed assessment were reasonable. The district manager could have waited for more definitive information on watershed condition before deciding he was satisfied the operational plans would adequately manage and conserve hydrologic resources. However, in evaluating discretionary decisions, the Board does not consider whether the decision was the best decision possible. Rather, the Board considers if the decision was consistent with sound forest practices, if it achieved the intent of the Code and if it was based on an adequate assessment of available information.

Before approving amendment #17, the district manager considered information that included three hydrologic opinions. The Board expects major concerns about conservation of forest resources to be clearly identified either during public review and comment or resource agency

review of operational plans. In this case, no one suggested to the district manager that amendment #17 was likely to pose an unacceptable risk to hydrology (or fisheries). Arguably, each hydrologist recommended that watershed assessment guide *future* harvesting. The district manager told the Board that it was his intent, based on the hydrologic opinion received, that harvesting in the Lussier drainage subsequent to amendment #17 would be guided by more detailed watershed assessment. The Board agrees that providing guidance to future harvesting is a reasonable interpretation of the hydrologic opinion available at the time to the district manager.

Under the circumstances, the Board accepts that it was appropriate for the district manager to be satisfied that amendment #17 would adequately manage and conserve the hydrologic (and fisheries) resources.

Opportunity for Review and Comment

The public's only formal opportunity to comment on operational plans is during the review and comment period for FDPs and amendments. The complainant stated that the review and comment process was inappropriate in that residents were not aware of the upper Lussier harvesting until the year 2000. They were also concerned that public and agency comment on FDPs may have been disregarded. The investigation assessed the opportunity for public review and comment on amendment #17, and how the licensee or district manager considered public comment.

Before a licensee submits a FDP or major FDP amendment for approval, the Code requires the licensee to advertise the plan in a newspaper and give the public an opportunity for review and comment, usually for 60 days. The Board confirmed the amendment was publicly advertised in a local newspaper and the BC Gazette, made available to the public, and submitted for approval in compliance with the Code. In addition, the licensee sent referral letters to numerous organizations, including a local environmental group whose representative resides in Sheep Creek.

Licensees are required to consider all written comments received during the review period and provide a copy of the comments to the district manager. The licensee decides if it is necessary to revise the plan and the district manager considers whether the licensee's response was appropriate. No public comments were made about amendment #17.

As there were no public comments on amendment #17, the Board reviewed public comment on the 1997-2001 FDP and confirmed that it had been submitted in accordance with Code requirements. The environmental group, MWLAP and MOF staff commented on CP 133 and CP142. The licensee responded to each comment and invited further communication. In some cases, the licensee revised the plan, but did not do so in matters pertaining to hydrology or wildlife habitat. The district manager was satisfied that the licensee responded adequately to comments it received. In his rationale statement, the district manager commented on public and agency concerns about the plan.

The review and comment process for the 1997-2001 FDP and its amendment met Code requirements. The Board accepts that the process was fairly administered by the licensee and

district manager. However, despite local newspaper advertisement, many Sheep Creek residents remained unaware of the harvesting plans. Therefore, newspaper advertisement was not effective in alerting area residents that proposed operational plans were available for review. The Board understands that the licensee now refers plans directly to the complainant.

Accuracy of Information

The investigation considered two issues about accuracy of information: one resulting from the investigation, the second raised by the complainant.

The Board discovered contradictory information about two cutblocks in amendment #17. Cutblock data tables indicated that about 80 of 320 hectares in CP 142 were to be "selection cut" (partial harvested). However, plan maps indicated the area as clearcut. Subsequent silviculture prescriptions showed the areas as clearcut.

The licensee explained that reference to "selection cut" was an administrative error as all cutblocks were intended to be clearcut. MOF review staff did note that amendment #17 changed the proposed harvest system from selection cut to clearcut, but did not identify the inaccuracy between plan tables and maps. MOF relies on professional accountability to manage staff time during plan review. Professional accountability is a risk-management strategy based on section 10(1)(e) of the Act, which requires that FDPs be signed and sealed by a professional forester, indicating the plan is accurate, complete and appropriate. The amendment was signed and sealed by a registered professional forester. As the mapped information was accurate and, as the public typically relies more on mapped information than data tables to understand operational plans, the Board does not consider the inaccuracy between the tables and maps to be significant to the public review and comment process.

During the year 2000, residents of the area and MOF met several times to discuss watershed concerns, harvest history and forest planning in the Lussier. The complainant said that MOF had shown them a map that identified some of the upper Lussier cutblocks as harvested when they were not. The complainant asserted that MOF intended to mislead the residents regarding the status of harvesting in the watershed.

The map, dated August 12, 1999, was originally created to represent equivalent clearcut area of the drainage. MOF staff explained that the maps described the upper Lussier cutblocks as harvested because MOF had previously issued cutting authority for those cutblocks. With cutting authority issued, MOF anticipated the licensee would fully harvest the cutblocks. The district manager told the Board the map was to indicate to the residents the status of the watershed when harvesting of all currently approved areas was complete. The complainant understood the map represented the existing condition of the watershed.

The Board confirmed that the map includes the cutblocks approved in amendment #17 as if they were fully harvested. The Board accepts that it is standard practice to illustrate equivalent clearcut area as completed-plus-approved harvest. Final cutting authority had been granted for the amendment #17 cutblocks and the licensee intended to harvest the cutblocks. While there may have been mis-communication as to the map's purpose, there is no evidence that MOF intended to mislead the residents about the status of harvested area in the watershed.

Conclusions

Amendment #17 and silviculture prescriptions for CP 133 and CP 142 complied with Code content requirements in regard to wildlife habitat and hydrology.

Under the circumstances, it was appropriate for the district manager to be satisfied amendment #17 would adequately manage and conserve wildlife habitat and hydrologic resources.

In the Lussier drainage, implementation of the Code has served to reduce the standard for wildlife cover and wildlife-movement habitat established by a pre-Code total-resource plan.

The review and comment process for both the 1997-2001 FDP and amendment #17 met Code requirements and were fairly administered. However, newspaper advertisement was not effective in alerting area residents about the opportunity to review plans. The licensee now refers plans directly to the complainant.

While there may have been mis-communication between MOF and area residents, there is no evidence that MOF intended to mislead the residents about the status of harvested areas in the Lussier watershed.

Recommendations

In accordance with section 185 of the Forest Practices Code of British Columbia Act, the Board makes the following recommendations:

To give meaningful assistance to approvers of operational plans under the Code, professionals should communicate opinion in sufficient detail to describe the forest resources at risk and the potential impact of operational plan proposals on those resources.

Government should amend section 14(1)(b) of the *Operational Planning Regulation* to remove the need for a designated environment official to have agreement of the district manager before requiring watershed assessment, where in the independent opinion of a designated environment official, the watersheds have significant downstream fisheries or water values and significant watershed sensitivity.